

We Claim

1. A fail-safe twin-recliner for automotive seats, said twin recliner comprising:
 - a. a master and a slave recliner disposed on either side of the seat assembly,
 - b. said master recliner further including a lower and a rotatable upper housing to be arranged on a seat cushion and seat back respectively,
 - c. a shaft arm member with a longitudinal cleavage on one side and a plurality of peripheral stepping arrangement on the other side, said shaft arm member axially disposed between the lower and upper housing of the master recliner,
 - d. a movable actuating lever with a web having a central passage engaged at right angle on to the first of the plurality of stepping arrangement of the shaft member,
 - e. an external spring means with one end hooked to the lower portion of the activating lever and the other end locked to the longitudinal cleavage of the shaft to facilitate a nominal return rate of the actuating lever,
 - f. the lower housing having a central passage and a teeth profile on its inner surface mounted on the second of said plurality of stepping arrangement of the shaft member,
 - g. an upper supporting plate with a projection locking means mounted on said lower housing,
 - h. an external spring return means with one end locked to the longitudinal cleavage of the shaft arm member and the other end hooked to the locking means of the upper supporting plate, to facilitate a nominal return rate of the seat back,
 - i. plurality of axial recesses on the inner surface of the lower housing,
 - j. plurality of inner sectors having a teeth profile on their outer surfaces disposed in the recesses,
 - k. a rotatable cam mounted on the third of said plurality of stepping arrangement having a projection is engaged with the slot of the lower housing to receive a rotary drive directly from the actuating lever to disengage and engage inner sectors,
 - l. a guiding plate with a central passage mounted on the fourth of the stepping arrangement of the shaft member to provide a synchronized movement of the inner sectors,

- m. the upper housing having a circular gear to provide locking means for the teeth profile inner sectors with a central passage mounted on the fifth of the stepping arrangement of the shaft member, and
 - n. said slave recliner having a mirror image components of the master recliner except the actuating lever, is in flow communication with the master recliner by means of a connecting rod to receive the corresponding drive from the master recliner.
2. The twin-recliner of claim 1, wherein the shaft arm member is a non-rotatable.
 3. The twin-recliner of claim 1, wherein the movable actuating lever is used as actuating means to permit an effort less selective position of a seat back with respect to the seat cushion through a range of reclined positions to a selected use position.
 4. The twin-recliner of claim 1, wherein a connecting rod with a bracket connects the master and slave recliner to effect the transfer of synchronized drive from the master to slave recliner.
 5. The twin-recliner of claim 1, wherein the recesses are arranged in the inner surface of the lower housing to provide a distortion free movement to the inner sectors.